

Abstract of the Disclosure

An exposed surface of inlaid Cu is plasma treated for improved capping layer adhesion while controlling plasma conditions to avoid damaging porous low-k materials. Embodiments include forming a dual damascene opening in a porous dielectric material having a dielectric constant (k) of up to 2.4, e.g., 2.0 to 2.2, filling the opening with Cu, conducting CMP, plasma treating the exposed Cu surface in NH_3 or H_2 at a low power, e.g., 75 to 125 watts, for a short period of time, e.g., 2 to 8 seconds, without etching the porous low-k material, and depositing a capping layer, e.g., silicon nitride or silicon carbide.